

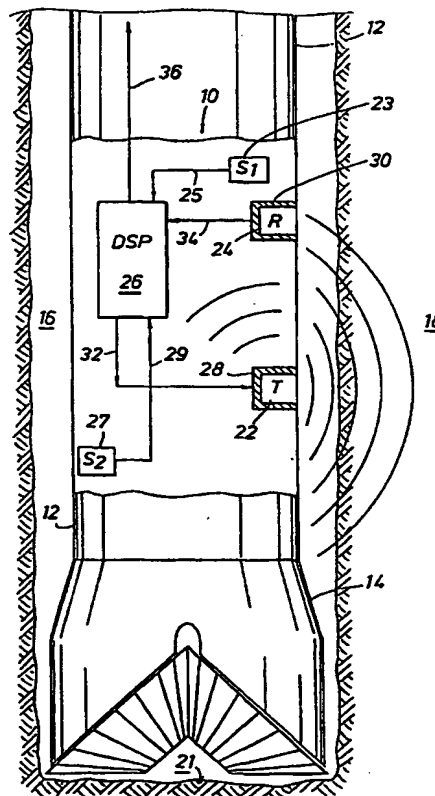
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G01V 1/40	A1	(11) International Publication Number: WO 00/57209 (43) International Publication Date: 28 September 2000 (28.09.00)
(21) International Application Number: PCT/US99/06308 (22) International Filing Date: 22 March 1999 (22.03.99) (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/954,508 (CON) Filed on 20 October 1997 (20.10.97) (71) Applicant (for all designated States except US): DRESSER INDUSTRIES, INC. [US/US]; 2001 Ross Avenue, Dallas, TX 75201 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): RODNEY, Paul, F. [US/US]; 6134 Jadecrest Drive, Spring, TX 77389 (US). (74) Agent: KAMMER, Mark, A.; Kammer & Huff, PLLC, Suite 304, 750 E. Mulberry, San Antonio, TX 78212 (US).		(81) Designated States: GB, NO, US. Published <i>With international search report.</i>

(54) Title: METHOD AND APPARATUS FOR CANCELLATION OF UNWANTED SIGNALS IN MWD ACOUSTIC TOOLS

(57) Abstract

An apparatus (10) and method are disclosed for eliminating a noise signal from at least one source during an acoustic measurement of a subsurface geological formation or borehole. The apparatus (10) includes a longitudinal body for positioning in the borehole and a transmitter (22) supported by the body for transmitting acoustic signals into the formation and borehole. A sensor (23), substantially isolated within the body, is used to detect one or more noise signals and a receiver (24) is carried by the body for receiving acoustic signals traversing the formation and borehole, and for receiving one or more noise signals. A processor (26) is connected to the sensor (23) and receiver (24) for processing the acoustic signals and noise signals coupled from the receiver (24) and the noise signal coupled from the sensor (23) into a preferred formation or borehole signal by determining the noise signal received at the receiver (24) using the noise signal received in the sensor (23) and a propagation factor for the noise signal between the sensor (23) and receiver (24). The determined noise signal is used to identify and eliminate the noise signals from the acoustic signals traversing the formation and borehole.



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